



## TCEQ Environmental Trade Fair and Conference

May 6, 2003  
Austin, Texas

Dennis Bollinger, Vice President



## **Developing Landfill Gas to Electricity Projects in the Lone Star State**

# Energy Developments, Inc.

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- Houston, TX Headquarters, est. 1998
- 7 Landfill Gas to Electricity Power Stations installed
- Over 40 MW of Green Energy generating capacity installed
- Additional Projects Under Development in TX, GA, FL, PA, OH, CA, and WA.



# Energy Developments, Ltd.

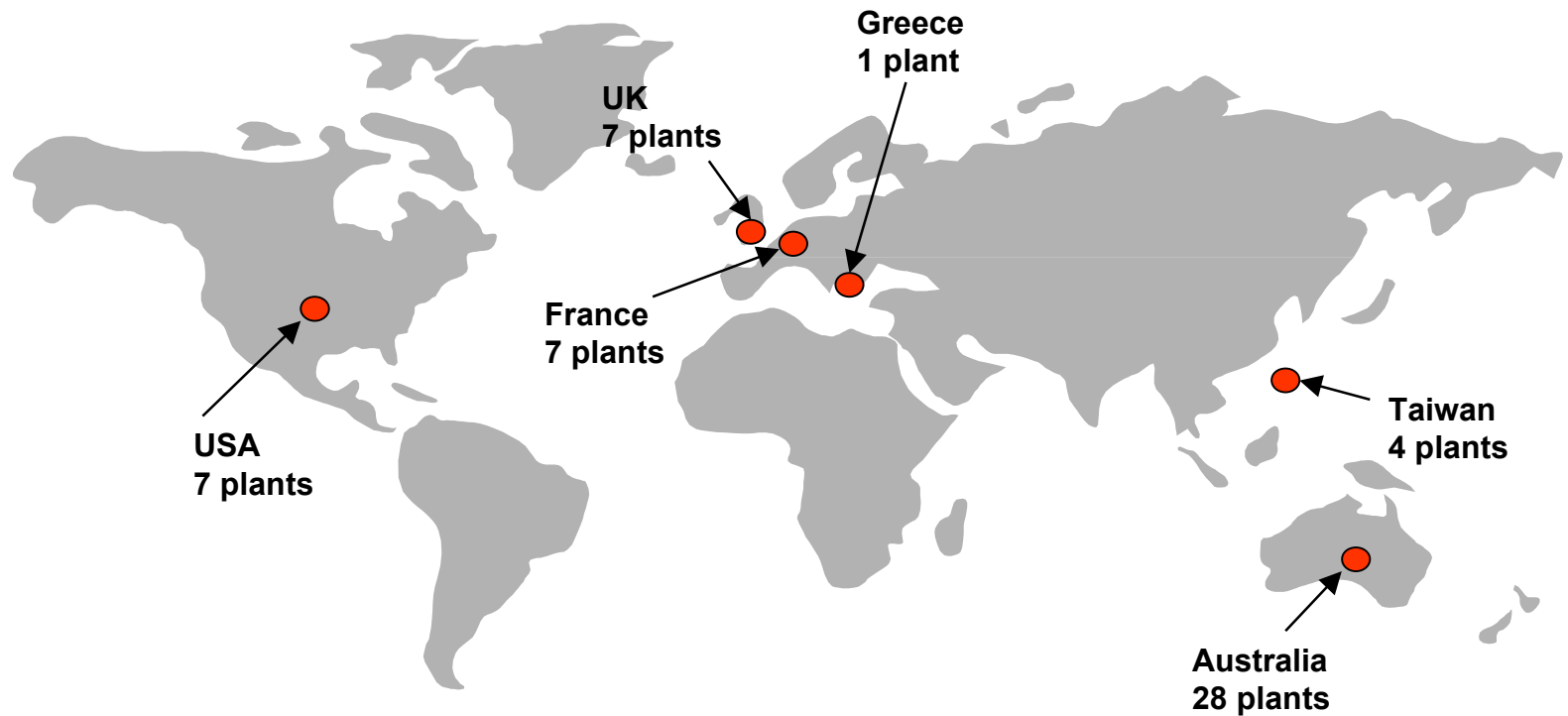
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- Founded in Australia, est. 1988
- Publicly owned (AXS - ENE)
- World leader in independent power generation utilizing renewable & waste fuels.
- Owns and operates 54 power plants worldwide
- Generates 382 MW worldwide
- Generating capacity of 180 MW using landfill gas



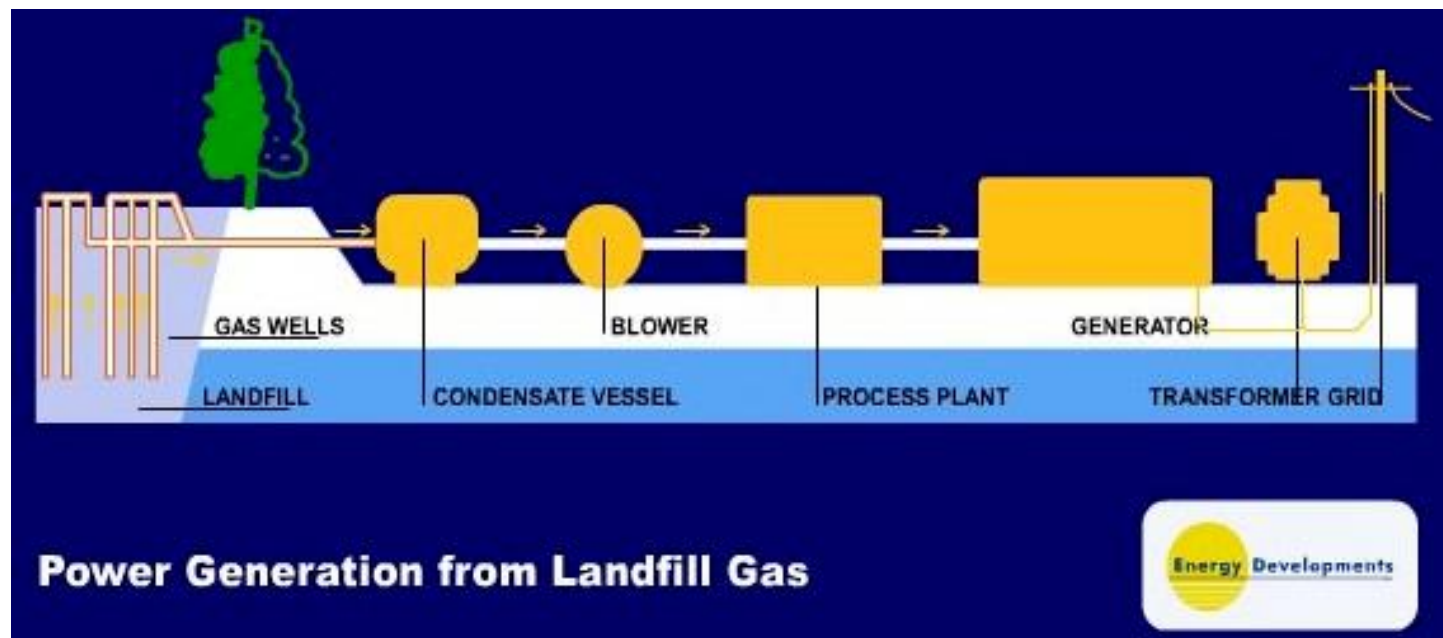
# Energy Developments, Ltd.

A global player in clean energy



# The Process

Landfills generate methane through anaerobic decomposition of municipal solid waste (“MSW”), producing landfill gas (“LFG”).



# Environmental Benefits

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- Using Landfill Gas to Generate **Green Power** Displaces the combustion of fossil fuels and the mining of coal.
- Using Landfill Gas to Generate **Green Power** helps curtail global climate change by greatly reducing emissions of methane, a potent greenhouse gas.

# Economic Benefits

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- Using Landfill Gas to Generate Green Power is a cost effective, renewable source of energy.
- Landfill gas is a reliable and renewable fuel source that is more cost-effective than other types of **Green Energy**.



# Location - Gas - Power Purchase Agreement

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# The Perfect Developer's Scenario

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EDI Secures Texas Landfill Gas Development Rights

Texas passes Renewable Portfolio Standard

EDI finalizes Power Purchase Agreement with the City of Austin for multiple sites

**Life is Good!**



# Project Challenges

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## **COMPLEXITY OF PROJECT DEVELOPMENT**

Many Parties Involved; Many Permits Required

Design Must “Fit the Fuel” not “Fuel to Fit”

Must Serve as Pollution Control Device and Power Station

## **LONG TIME FRAME FOR PROJECT DEVELOPMENT**

Months for Contract Negotiation

One Year Plus for Permits

Construction Must Accommodate Landfill Needs

## **PREJUDICE AGAINST LANDFILLS**

High Local Land Use Fees Cut Into Already Tight Budget

Some Opponents Protest Any Landfill Development Project

Some Opponents Do Not Want Any Benefits Going to Landfill



# Regulatory Process

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Air Permit

Texas Type IX

Local Approvals – Zoning, Building, etc.

Construction

Commissioning

# Air Permit (the old process)

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## Permit by Rule or Permit by Exemption

Relatively Simple Process

Fast Turn Around Time

Manufacturer Standard Emission Limits

# Air Permit (the new process)

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## Standard Permit

Costly Process

Longer Review Time

Stringent Emission Limits

# Type IX Permit

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## Modification to the Landfill Operation

Complicated Application

Costly Application

Long review period

# Local Approvals

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## **Community Outreach**

Public Meetings Early and Often

## **Local Governmental Approval**

Educate Local Governmental Officials

Provide Appropriate Documentation

Push to Maintain Schedule



# Construction Meets Allison

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# Construction- San Antonio Summer 2002

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# Construction- San Antonio Summer 2002

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# Blue Skies and Sunshine





# Commissioning – San Antonio Fall 2002

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# Operational - San Antonio Fall 2002

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# Expansion - San Antonio Spring 2003

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# Future EDI Texas Projects

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## **San Antonio**

Covel Gardens - 9.6 MW

## **Dallas**

2 sites – 6 MW

## **Other Texas Sites**

3 Sites – 10 MW

**Totaling over 25 MW**



# Future Texas Project Challenges

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## COMPLEXITY OF PROJECT DEVELOPMENT

Limited number of developable landfills

Many Permits Required

One Year Plus for Permits

New Emission Standards

